

**Notice of Allowability**

Application No.

09/890,447

Examiner

Susan Hanley

Applicant(s)

AKIYAMA ET AL.

Art Unit

1651

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/23/05.
2. ☒ The allowed claim(s) is/are 5,7 and 13.
3. ☒ The drawings filed on 19 October 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 3/23/05.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

## EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

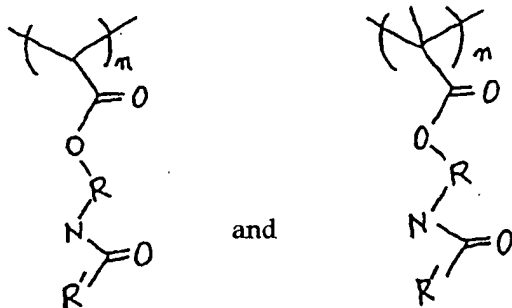
Authorization for this examiner's amendment was given in a telephone interview with Royal Ronning on March 23, 2005.

The application has been amended as follows:

Claims 19-22, 24, 29, 36-39, 45-50, 61, 62, 64, 68, 75, 76, 81, 83 and 88 have been cancelled.

Claims 5, 7 and 13 were replaced by the following:

-- Claim 5. A polymer compound comprising a structure selected from the group consisting of:



wherein:

$R$  is a linear or branched divalent aliphatic hydrocarbon group having 1 to 8 carbon atoms, a divalent alicyclic hydrocarbon group having 3 to 8 carbon atoms, or a divalent aromatic hydrocarbon group having 6 to 14 carbon atoms;

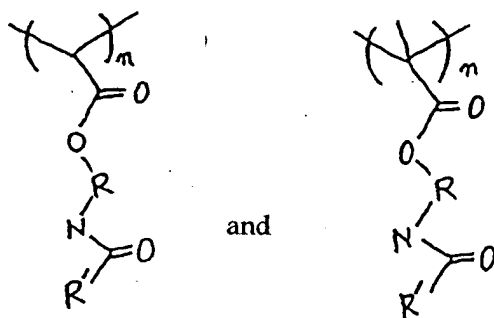
$R'$  is a linear or branched aliphatic hydrocarbon group having 1 to 8 carbon atoms, a linear or branched aliphatic hydrocarbon group having one or more hydroxyl groups and 1 to 8 carbon atoms, a linear or branched aliphatic hydrocarbon group having one or more

Art Unit: 1651

acid amide bonds and/or ester bonds and 2 to 9 carbon atoms, or a linear or branched aliphatic hydrocarbon group having one or more acid amide bonds and/or ester bonds, one or more hydroxyl groups and 3 to 9 carbon atoms; and

n is an integer of 2 or greater, wherein said polymer has acid amide bonds at two or more sites in the polymer chain. --

-- Claim 13. A material for separating or absorbing biological samples comprising a structure selected from the group consisting of:



wherein:

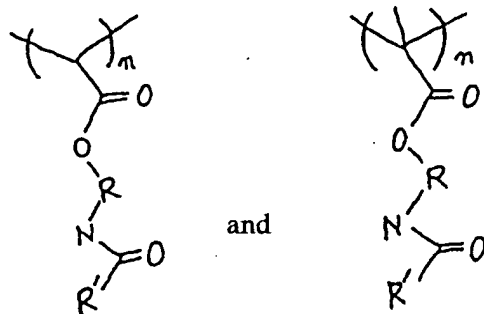
R is a linear or branched divalent aliphatic hydrocarbon group having 1 to 8 carbon atoms, a divalent alicyclic hydrocarbon group having 3 to 8 carbon atoms, or a divalent aromatic hydrocarbon group having 6 to 14 carbon atoms;

R' is a linear or branched aliphatic hydrocarbon group having 1 to 8 carbon atoms, a linear or branched aliphatic hydrocarbon group having one or more hydroxyl groups and 1 to 8 carbon atoms, a linear or branched aliphatic hydrocarbon group having one or more acid amide bonds and/or ester bonds and 2 to 9 carbon atoms, or a linear or branched aliphatic hydrocarbon group having one or more acid amide bonds and/or ester bonds, one or more hydroxyl groups and 3 to 9 carbon atoms; and

n is an integer of 2 or greater, wherein said polymer has acid amide bonds at two or more sites in the polymer chain. --

Art Unit: 1651

-- Claim 7. A polymer material comprising a structure selected from the group consisting of:



wherein:

R is a linear or branched divalent aliphatic hydrocarbon group having 1 to 8 carbon atoms, a divalent alicyclic hydrocarbon group having 3 to 8 carbon atoms, or a divalent aromatic hydrocarbon group having 6 to 14 carbon atoms;

R' is a linear or branched aliphatic hydrocarbon group having 1 to 8 carbon atoms, a linear or branched aliphatic hydrocarbon group having one or more hydroxyl groups and 1 to 8 carbon atoms, a linear or branched aliphatic hydrocarbon group having one or more acid amide bonds and/or ester bonds and 2 to 9 carbon atoms, or a linear or branched aliphatic hydrocarbon group having one or more acid amide bonds and/or ester bonds, one or more hydroxyl groups and 3 to 9 carbon atoms; and

n is an integer of 2 or greater, wherein said polymer has acid amide bonds at two or more sites in the polymer chain. --

The following abstract was added:

-- A temperature-responsive polymer and polymer material which has ester bond(s) and/or acid amide bond(s) respectively at one or more sites in the side chain and can be arbitrarily controlled by varying the side chain is provided. --

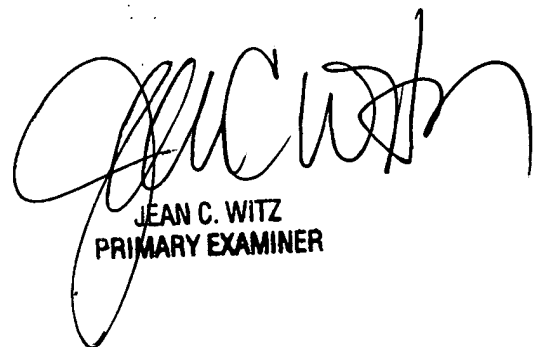
Art Unit: 1651

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Hanley whose telephone number is 571-272-2508. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Susan Hanley  
Patent Examiner  
AU 1651



JEAN C. WITZ  
PRIMARY EXAMINER